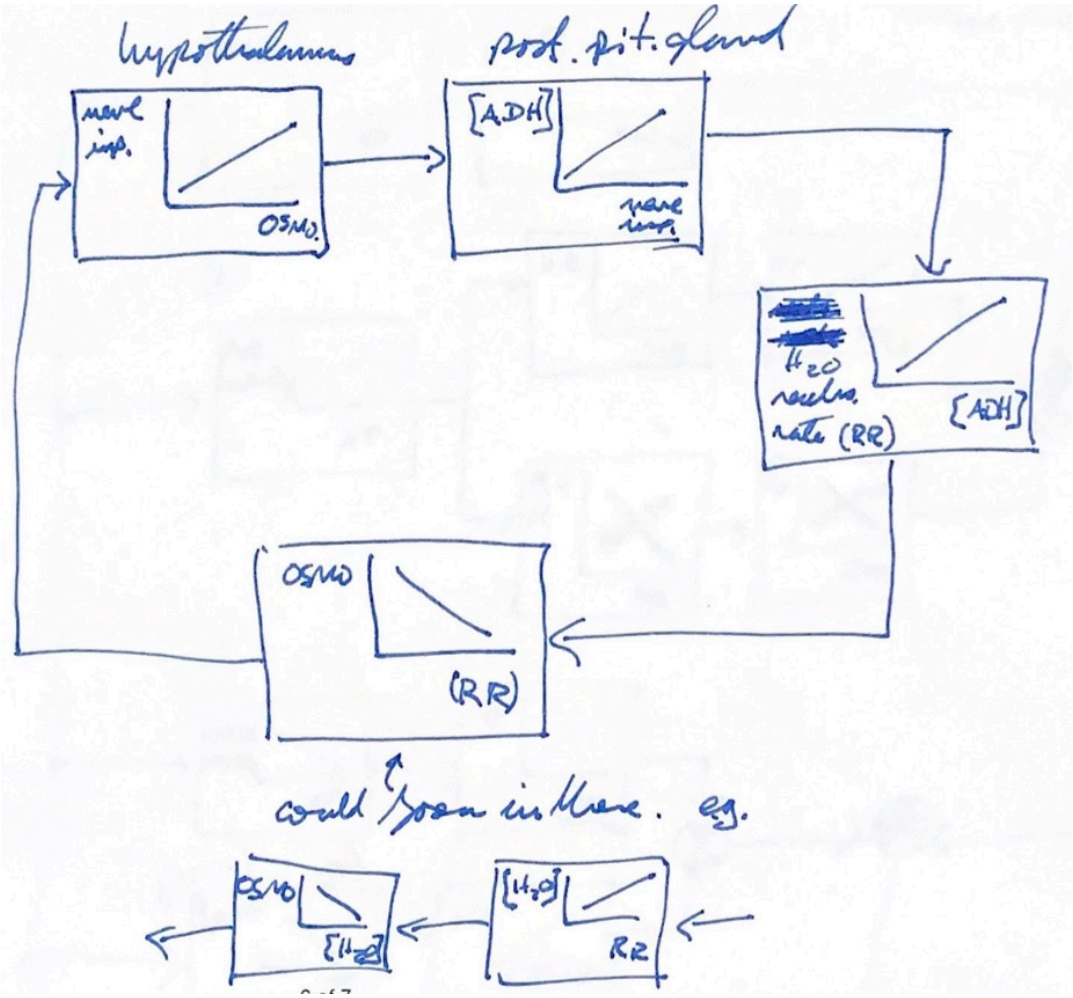
BME 444
HW 6 - Key

1. Simultaneously solve the equations to get the answers below. Negative numbers are meaningless and should not be included.

$$P_{aCO_2} = 2.326$$

$$\dot{V}_A = 1.78$$

2. One possibility. Note the second paragraph in the problem description describes how the osmoreceptors work within the hypothalamus. The second para does not represent another control system.



3. Equilibrium values for P_{aO_2}, P_{aCO_2}, and $\dot{V}_C$ are

$$P_{aO_2} = 58.3 \text{ mmHg}$$

$$P_{aCO_2} = 39.0 \text{ mmHg}$$

$$\dot{V}_C = 6.14 \text{ L/min}$$